

UNNATURAL CAUSES ...is inequality making us sick?

A four-hour series airing on PBS and a national public impact campaign

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HUMAN DEVELOPMENT AND STRESS

Humans at birth are among the most helpless of species. Humans are very dependent on being taken care of by adults from birth. No human baby could live on his or her own and so part of what's kind of biologically expected for our species is that as babies we're protected by adults, that the importance of a protective, stable, dependable, nurturing relationship is essential to our basic biology, and when there is a threat for which we're not protected by those supportive relationships, that signals to the body that something is very wrong and that creates a very high stress situation for infants, for toddlers and for pre-schoolers.

Many people, when they hear the word stress, don't necessarily think of it as bad. They say, well, you know, stress is good. Stress is character building. Stress is a natural part of development. So it's important for us to help people understand that there are different kinds of stress experiences, some of which are normal and healthy and character building and some of which are literally toxic – what we call toxic stress.

When we talk about stress in young children we're not talking about the thing that causes stress; we're talking about the child's experience of being stressed and we've developed – by we, I mean the National Scientific Counsel on The Developing Child – a three-category way of thinking about stress.

So, the three categories are the following. The first is what we call positive stress. This is characterized by mild elevations in your heart rate, your blood pressure goes up a little bit, your cortisol levels go up a little bit and it's the kind of stress experience that's associated with normal, predictable events in early childhood: things like meeting new people, being in a strange place for the first time, being told that you have to put your toys away and go for a nap, being told you have to share your toys, you can't have a fifth cookie. All of those things are stressful for children, but they occur in the context of normal, everyday interactions and children are helped to deal with that stress by the people around them, generally their parents and other adults who might be caring for them, particularly child care providers in a child care center. So that's good stress, and it's essential for healthy development because you have to learn how to deal with stress.

The next category of stress we call tolerable stress and this is associated with potentially serious threats: things like the death or serious illness of a loved one, a frightening injury, being witness to a terrorist attack or a natural disaster like an earthquake or a tidal wave or hurricane. These are the kinds of things that can be challenging and actually damaging to children because what happens is when the stress systems go up, your heart rate goes up, your blood pressure goes up,

and your stress hormone levels go up. They're supposed to go up in dealing with a threat and then they're supposed to come down because adults help you cope. They help you calm down and those stress systems go back to the baseline. If they don't come down, especially the stress hormone levels, they can literally be damaging to the brain. So, tolerable stresses are the kinds of things that potentially could be damaging but they're not, because there are adults who help a child get through. Think about our experience with Hurricane Katrina and you see the stresses some of those young children were under. Well, if their families were there to help them through or if there were program services to help them, reassure the children, help them adapt, then their heart rate comes down, their stress hormone levels go down, and there is no damage done, so they don't have long-term consequences from that.

But that leads us to the third category, which we call toxic stress. That is when the stress hormone levels go up, stay up, and they don't come down. When they stay up, they are literally chemically toxic to the brain. The brain can't tolerate it for long periods of time. So, the kinds of things that cause toxic stress are abuse, neglect, exposure to violence in the family, serious mental illness in a mother, particularly depression, very deep poverty where on a day-to-day basis, the basic survival needs are not met.

What is characteristic of toxic stress is that there isn't a stable, available adult to help the child cope with that amount of stress, in the case, let's say, of neglect or abuse. So the flight or fright system, that physiological response to stress, gets activated and it stays up and it doesn't come down. And if it stays up for days and weeks on end, week after week, those hormone levels literally interfere with the development of brain circuitry, they interfere with the development of the connections in the brain that are important for learning and memory. So we begin to see in children who experience toxic stress long-term impacts of what's basically been chemically damaging to their brains.

GENETICS PLUS EXPERIENCE

Our brains are built over time. They start to develop during pregnancy in the uterus and then there is a huge amount of brain development that takes place after birth. When we talk about brain development, we're talking about the development of circuits in the brain, connections among brain cells that occur in a sequential fashion and that are responsible for everything from learning to talk to being able to walk and figure things out and problem solve. All of the skills, all of the thinking, all of the emotional capacities of the brain ultimately can be explained by these very complex circuits that connect different parts of the brain, that basically result in all the things that make us unique individuals.

That circuitry, that architecture of the brain, is influenced by both genetics and by experience. There's a genetic program for these circuits to be developed, but it's literally shaped by the experiences children have. It's not on automatic pilot. It doesn't just develop by itself. So, the quality of the relationships children have, the nature of the environments they live in, the kind of learning experiences they have, the degree to which they're taken care of and protected, all of that is truly shaping the development of these circuits, truly influencing the architecture of the brain. And so when there's toxic stress, when there's disruption of those relationships, when the

protective, nurturing relationships aren't there and these cortisol levels get very high, they interfere with cell growth, they disrupt the development of those circuits. And once those circuits are developed, you live with those disrupted circuits for the rest of your life. It doesn't mean that you can't compensate later, but your brain has to work harder; it has to figure out how to get around the fact that some of its early circuits were disrupted because of the influence of this toxic stress in early childhood.

So, the brain is constantly being built and shaped by experience. A huge amount of that happens in early childhood, but it continues into adult life. There is another big spurt of development in adolescence and even into adult life, so mature adults learn new things. It's harder to learn new things when you're older; it's harder to change behavior. The brain is less flexible as it gets older but a large part of that architecture is built very early and it's shaped by experience.

STRESS THRESHOLD AND IMMUNE RESISTANCE

The brain, as it's developing, is also interacting with the immune system and interacting with a lot of the regulatory systems in the body that affect your metabolism, so in the same way that a developing immature brain in a young child is influenced by experience, so is the immune system influenced by its experience with the kinds of infections that it's exposed to and so is your stress regulating system influenced by how much stress you experience.

For example, when young children are exposed to toxic stress, it also affects the set point, the threshold for activating their fight or flight system. Each of us as adults has a different threshold for what it takes to make our blood pressure go up, make our heart rate go up, make our stress hormone levels go up. Some people can tolerate a lot of stress before their heart starts pounding. Other people are on a much shorter fuse. You could think of it as a stress thermostat in your body; how much stress does it take to get the system going, how low does the thermostat have to go before it turns on the furnace in your house? Where that set point is going to be is in part genetic, but in part influenced by your early experience with stress.

So, children who experience a significant amount of toxic stress in early childhood have a lower set point for activating their stress system, that they then have for the rest of their life and there's a lot of speculation now about whether this might be the explanation for why children who experience a lot of difficulties early in life are more likely to have life-long health problems.

We've known for a long time that there are very significant social class differences in health status and it's not just due to access to medical care. It has to do with whether people get sick or not and we know that adults who experienced serious adversity – abuse or neglect, exposure to violence when they were younger – as adults, they're more likely to have stress-related physical and mental health problems, including the very common, expensive for the health care system problems like cardiovascular disease, hypertension, diabetes, depression, anxiety disorders and substance abuse, including alcoholism and illegal drugs. All of those conditions in adults are found in a higher frequency among adults who when they were children experienced toxic stress.

There is a very compelling hypothesis now - obviously there's still more research that has to be done - but the reason for these differences in vulnerability to illness later may very well be related to this early impact on your stress-regulating systems that makes you more vulnerable to illness for the rest of your life.

CUMULATIVE RISK BURDEN

The concept here is the pile up of risk, the cumulative burden of having things that are increasing your chances of having problems as opposed to the cumulative protection of having things in your life that increase the likelihood that you're going to have better outcomes. Science has never shown that there's one thing that will predict either good or poor outcomes later. It's what's the relative balance in your life between the things that help produce good outcomes and the things, you know, that lead to bad outcomes.

So, if you're dealing with being poor, let's say, in a family with low income, if there are good family supports, if the parents have enough energy at the end of the day to be able to provide the kind of interactions that children need, if they are not totally drained by just the burden of day after day not knowing whether there's going to be food on the table or not knowing whether you're going to have a roof over your head – that unremitting stress of not being able to deal with the bare essentials of survival. Then, if there are problems in a neighborhood with a lot of violence and social difficulties in a neighborhood that put more pressure on families, your kids can't play out in the street, I mean you have to, you know, you have all of these worries about protecting them from dangers in the community. If you compound on top of that unemployment, that could put you more at risk for depression, put you more at risk for problems with alcoholism.

If you start to pile up all of the things that can be associated with being poor, a lot of them can be causes of toxic stress for young children if they end up really interfering with basic, kind of day-to-day functioning. Increased stress and strain in a family increases the likelihood of violence in a family. It's not exclusive to poor people. There are plenty of middle class people who have problems with violence in their home.

On the other side of this, if children are protected from a lot of the stresses in life – you have parents who are resilient and who are providing good experiences for their kids, you have access to other neighbors, other people in the community who provide good supports, all of those things – that's money in the bank for a young child. That's protection. That helps to build healthy brain architecture. That helps to build a healthy immune system.

So all of it really comes down to whether you're building a strong or a weak foundation in early childhood. When you pile up risk factors, it ends up being translated into a weaker foundation, a brain that's been subjected to more disruption, an immune system that's been more threatened.

All of this is about probabilities. It's not about saying, if this is the way you're living now you're definitely going to be in a certain position later. It's about shifting the odds and that's where policies become really important. Everything that adds to the protection and the

availability of good environments, good learning environments for children, increases the odds of a better outcome.

BREAKING THE CYCLE OF POVERTY

Clearly, when children live in families that have a history of health problems and a history of learning problems and learning difficulties, it's very hard to separate out how much of that is genetic and how much of that is in the environment, because of the amount of stress related to some of these issues. If a father has hyperactivity and his son has hyperactivity, well, how much of that is genetic and how much of that is the impact of a hyperactive father on a young child who then becomes hyperactive? What's important about this is to understand that we need to be thinking about both genetics and environment in terms of breaking the cycle. This is where there is a certain irony since the Human Genome Project was accomplished. Before the coding of the human genome, when we said something was genetic, that usually meant there's nothing we can do about it. If we said it's environment, that usually meant, well, maybe we can change that. But it's not easy to change environments. It's not easy to change behavior, and since the Human Genome Project and this whole molecular biology revolution we're living in, the irony is that we may be close to the point where it may be easier to change genetics than it is to change the environment.

So, really we have to think about both. How do we break the cycle? How do we break the cycle of poverty that's related to poor education, poor skills, and limited opportunities to become economically self-sufficient? How is our welfare reform approach in this country likely to break the cycle of poverty? Well, what the science would tell us is if we want to break the cycle of poverty, we have to do something significant about the early experiences children have that are going to set them up to be more likely to succeed in school and to be economically productive than to fail.

So if we took that science and brought it to the domain of welfare reform, let's say, which is now heavily focused on mandated employment for mothers in order to be able to get their public assistance, we would focus more on the young children than we would on adult behavior. We wouldn't focus as much on the mother's employment as we would on the children's learning experiences.

If we were going to use the science to break the cycle of poverty, we would say, well, young children who are living in these low-income circumstances – it's a wonderful opportunity to provide really rich learning experiences and supportive environments to promote healthy brain development and then a good foundation for lifelong learning and health to maximally prepare these kids to succeed in school and in life and be more likely as adults themselves to be raising children in an economically secure environment.

This is a good example of where policy isn't really using the insights that early childhood science has to offer. Breaking the cycle means changing the nature of the environment and the experiences that kids have early in their lives, so you increase the odds that they will move in a different direction. It's about building strong foundations for learning and good health instead of weak foundations that leave children more vulnerable to just keep that cycle going.

DEVELOPMENT IS A CONTINUOUS PROCESS

Development is a continuous process and there is nothing we would do at any point of development that is like an immunization. I'm a pediatrician, so I'll use a medical model. You can immunize somebody against measles and maybe give them a booster at some point down the line and then you're covered. It protects you for a long period of time. There's nothing about development that works that way. There are no magic bullets; there's no single thing that you can do early on. If you provide the best kind of pre-school environment for children, if you're working in a community where there's a lot of risk and you provide a wonderful early childhood experience for children and they come to school really ready to succeed, healthy brain development and they go to a rotten school system, you know in a couple of years they're just not going to be doing too well. That early period didn't immunize them against a crummy school system.

If you're working in a community, and you could start at birth or even prenatally, which would be better, you're going to be that much more ahead of the game and you're going to get two things out of that. You will get a bigger bang for your buck; you will get a higher return. The earlier you start, the better your return and the better your outcome. The later you start, the more expensive it's going to be. Remedial education in fourth grade is much more expensive than a good pre-school program for a three-year-old and remedial education in fourth grade is much less expensive and much more effective than a retraining program for a 22-year-old who can barely read.

So, at no point along the line do you throw your hands up and say we can't do anything, but it is always easier and better if you start earlier, because the brain is developing continuously – that architecture is being developed continuously – and at any point in time whatever the brain is mastering, it's building on what was developed before. It's either building on a weak foundation or building on a strong foundation, and what you do at this point in time is going to contribute to a weaker or a stronger foundation going forward. So it's always about trajectory. It's always about, you know, trying to move the trajectory into a positive direction; keep it from going in a negative direction wherever you happen to get on along the way.

IS BETTER HEALTH CARE THE ANSWER?

If you think about the health needs of children globally, they're very basic. Most of the health problems of children in the developing world would be solved by clean water and sanitation and decent nutrition. In the developed countries like the United States, the basic health problems are much more related to the social and economic circumstances that children live in, rather than problems that will all be easily solved in a doctor's office or in a hospital.

It's unthinkable that a country with the wealth that we have doesn't guarantee health care to everyone, no less every child. So there's a lot of attention being placed right now on making

sure that every child has health insurance, and at some point, I trust, in the not too distant future, every child in this country will have health insurance.

But then we will be facing a different challenge, which is just because children have health insurance doesn't mean they're getting good health care. So there's still the issue of access to health care. So let's say at some point every child in this country will have access to health care. That's not an impossible thing to think about, but then, still, that's not going to answer all of the health care needs, because most of the unmet health problems in our country right now are not problems that hospitals are set up to deal with or doctors' offices.

They are problems related to the kinds of toxic stress that children experience as a result of exposure to violence, being subjected to abuse or neglect, and you can't write a prescription from the doctor's office to say, you know, discontinue abuse and neglect. You can't go to a hospital and go home with a treatment plan that says, no more violence in the community. Those are issues that go well beyond the health care system and those are the great threats to the health of children in a country as rich as ours. And I think, ironically, those are also the building blocks of most of the expensive health care problems that the adult population has in this country.

We know that a lot of our health problems as adults are related to lifestyle issues and stress, so we hear these calls all the time for people to eat better, exercise more, don't smoke, don't drink excessively – all of which is good advice. But a lot of these behaviors are related to patterns that are set early in life and a lot of the vulnerability to develop some of these diseases is related to patterns set early in life. So if you don't smoke and you exercise well, but you have high blood pressure or you develop diabetes, it may not be because you didn't exercise enough. It may be because there were things that you experienced early in your life that made you more biologically likely to have hypertension or to have diabetes and a lot of that can be related to early childhood stress.

We have exploding health care costs in this country. We have lots of expensive ways to treat all kinds of diseases. And clearly one of the ways we need to make progress is to do better on the prevention side than on the treatment side. For some people, prevention for adults means exercise, diet, trying to deal with stress as adults. Although there is good evidence that that will be helpful, the real prevention agenda for adult health problems is in early childhood, where a lot of the impacts of serious adversity in early life, can lay the roots for a lot of adult health problems, even though we won't see them until many years later.

It's so hard to have the kind of impacts we want on these prevention programs that just start in adult life. It's starting too late, and if we haven't paid attention to the impact of lifestyle issues on the early development of the brain and the immune system and the pre-school period, we're missing a very important part of a prevention strategy for dealing with adult health problems in this country.

THREE SOLUTIONS FOR THE PRICE OF ONE

It's only recently where we have a better understanding of how much the early childhood years lay a foundation for health, both physical and mental health and learning and behavior across the life span, based on some new science that we have, from neurobiology, from immunology and also some of the scientific work that's been done by economists and other social scientists.

Because of the way we've divided up our knowledge base, we have until recently tended to think about health as separate from learning and learning as separate from behavior.

There are some people who are really interested in improving school achievement and have begun to understand that if you want to improve kids' performance in school, and ultimately their readiness to be productive workers after they graduate school, you have to start in early childhood when a lot of the foundations of learning are being established. At the same time, people who are interested in the prevention of violent crime have begun to understand that the time to intervene and prevent violent criminal behavior is way early in life when patterns get established and the impact of violence on brain development can make a child more vulnerable to the kinds of behavior that ultimately lead to crime. So you see an organization like Fight Crime, Invest in Kids that's made up of police chiefs and district attorneys and U.S. attorneys and other law enforcement officers who advocate for investment in early childhood programs as a way to cut down on the amount of crime in this country.

And then you have the third piece, which are people interested in the health of the population, who understand that the roots of disparities in health occur much earlier in life. So, what's exciting about bringing these different areas together is that from a policy perspective we essentially can get three for the price of one. If we have limited resources, should we put our money into school readiness? Should we put our money into preventing health disparity? Should we put our money into preventing violent crime later? What science tells us is you can get all three for the price of one by putting your money into safe, growth-promoting, healthy environments for young children, particularly children at risk, because the payoff occurs in all of those areas and it's not a different intervention for each of them.

They all have the same core roots, which are providing protective, stable, nurturing relationships, protecting children from toxic stress, providing good learning opportunities for them. All of that will help you increase the odds of productive school achievement, good health on a life long basis and lower likelihood to end up in prison for criminal behavior.

It's not a cure all; it's not magic. It doesn't eliminate those problems but it can dramatically decrease the probability of those problems by the same core investment in the early childhood years.

The alternative to not investing in early childhood - particularly for children who are vulnerable because of the environments they live in - is to live with high rates of school dropout and criminal behavior and poor health. It's mind-boggling that we have so much more knowledge right now about these early roots and that there's still resistance to investing early on in producing better outcomes for kids and this issue of the return on the investment; what's exciting about that is we have more and more economists who are studying this now.

You know, it's one thing for an early childhood advocate to say this is a good investment. It's one thing for a social worker to say, if you invest in young children, you will save money later. But how about when an economist says that? How about when Nobel Prize-winning economists say this is a good investment? How about when people at the Federal Reserve Bank, as they have recently, say this has a higher return. Early education for low-income children has a higher return on investment than tax incentives for a business to come into an inner-city area and provide jobs.

There's people who have done these analyses now and all converge on the same findings that investing early and providing the kinds of supports and environment that will produce good incomes will not only produce better health, better learning, less crime but will also save us a lot of money in our public budgets.

RESISTANCE AND A SHARED FUTURE

I think it's a reasonable question to ask, given the power of the knowledge that we have now; the power of a lot of this new science, why is there still resistance to investing more in young children and there are a few reasons for that.

One is that some people don't believe or don't know about this new scientific information. Because when people are educated about this science, they become more supportive of making public investments in the lives of young children, particularly those who are vulnerable, and in supporting their families. Another reason for the resistance has to do more with values and ideology than with science, because when we talk about shared responsibility and public investment in other peoples' children, that touches on some core issues that are part of the culture of the United States.

We live in a country that has a very strong tradition of believing in individual self-reliance, pulling yourself up by your boot straps, rugged individualism and limited government, and particularly when it comes to a family with young children, there's a built-in resistance to wanting any part of the public or the government to get involved in the lives of young children. It's a value issue, and that's why there's been long-standing opposition to government involvement in the lives of young children.

That resistance is really lessening and it's decreased significantly in the last couple of years. And we can see it all across the country, including in areas that are very conservative in terms of their attitudes toward government programs and tax-supported expenditures, because when people understand and hear the science, they begin to understand that this is not about other people's children. This is about all of our children. There is much more of an appreciation that our economic competitiveness in the world and our ability to kind of pay for our own needs here in this country is dependent on a well-educated, highly skilled work force.

Without education and without skills you cannot survive in this economy, so now this becomes a problem for all of us, because if there is a part of the population that can't be economically successful, that becomes a potential drain on the society. Also, for every child who grows up

who is not economically independent, that's one less adult to pay for Medicare and Social Security for the baby boomers.

It's a cliché but in this case the cliché is really true. It's really investing in the future of the country. It's investing in the economic future of the country. It's investing in future prosperity. It's investing in economic security. It's investing in a viable, democratic system. Without a well-educated population, all of those things are in jeopardy, so we've really for a long time had this barrier of people wanting to see public involvement in the lives of young children and I think an understanding of the science now shows us that this is really a shared interest. We see all across the country, now in some very conservative regions, more interest in public sector-private sector partnerships to invest in young children. We see government stepping to the plate. Many state governments are doing that now. We see business stepping to the plate, we see philanthropy stepping to the plate – all of which are saying, if we don't invest in young children, we're going to have a less productive work force, we're going to have a less healthy population, and whatever we're not willing to spend today we're going to spend a lot more for later on. I think that's really why it's changing.

HOW OUR POLICIES STACK UP AGAINST OTHER COUNTRIES

It's pretty striking to look at the rest of the world and compare the United States in terms of how we address the needs of young children. And in this area, it's tragic actually that we are the richest country in the world and we are far behind many other countries in terms of how we use our resources to make life better for families with young children and thereby invest in our future. We are the only industrialized country in the world that doesn't guarantee health care for all children. We are one of very few developed countries in the world that doesn't provide universal access to publicly supported early care and education to some degree. Every European country - none of whom has an economy as strong as ours but all of whom are developed countries - has some kind of paid leave for parents after the birth of their child. Some longer than others, some more generous than others, but all of them provide some kind of wage replacement, giving parents - in most cases, mothers or fathers - the opportunity to stay home longer with their child and to have some income so that they can have a longer period to settle in as a family, to bond with their child and experience parenthood without the pressures of work.

So, when we compare ourselves to other countries - it used to be a while ago, the comparison used to be Sweden. Everybody would say, oh, Sweden has all of these services and we would say, well, we're not Sweden. Now it's not Sweden anymore; it's every other country, basically, invests more in young children than we do, and the reason for that is because we are a country that prizes individual responsibility over shared responsibility more than anybody else. There's nothing bad about individual responsibility; it's very important and it's part of what makes our country as economically productive as it is. But at a certain point I think we have to ask ourselves whether the resistance to more interdependent, shared responsibility is doing more harm than good, particularly when it comes to meeting the needs of all young children, because we all have a vested interest and we'll all either benefit or pay for how well we take care of all of our young children in this country.

So, on a comparison basis, we look bad. We look really bad on a comparison basis and we're paying for that in a lot of important ways. Our test scores are not as good at school age as other countries for many years but most important in a global economy, looking to the future, this is where we are the most vulnerable. And I think it's why there's more support for investing in young children right now, because people are becoming increasingly aware of the fact that the United States cannot remain economically competitive well into the twenty-first century on a global basis if it doesn't invest in human capital. And human capital investments start at birth.

CREATING CHOICES FOR FAMILIES

So, what could we say about the last 30 years? One thing we could say is that there's been an explosion of new knowledge about early childhood development, much more knowledge about how the brain develops, how experiences affects the development of the brain, the architecture of the brain, and also tremendous progress in a lot of the developmental and behavioral sciences that help us understand what promotes competence in young children. At the same time, there has been a dramatic change in the way in which we raise young children in our society. We have many more single-parent families; we have many more two-parent families where both parents are working. The proportion of young children who spend a lot of their daily time Monday through Friday in the care of adults other than their parents has risen a tremendous amount over the last few decades.

So, the numbers of parents who are holding more than one job in order to make ends meet has increased. Thirty years ago, one income was generally enough to support a family. Now for a large part of the population, two incomes are necessary to support a family. So, if you look at both of these moving together, you would say, well, this may be a more challenging environment to raising kids but at least we have more knowledge about how to promote that in the most positive way.

The frustration and the irony is that we haven't used all of the knowledge we have to create better circumstances for families who are raising young children. We don't provide as much support for families as we should, given what we know. Look at the terrible choices that many families face on the birth of a newborn or the adoption of a baby, who really have very little choice about whether to stay home with that baby or go back to work right away. The issue is not choosing one over the other. The issue is providing choices for people, and all of the research that we've done that tells us how important those early bonding relationships are and particularly how sensitive those periods are, you would think that we would use that knowledge to develop policies and supports that would provide more choice for parents, particularly mothers, because the burden is still mostly falling on mothers, about whether and when to go back to work. There are many other countries in the world who provide better choices than we do, who provide options for wage replacement for parents who want to stay at home longer with their kids.

In our country, unless you're covered in some way, you have to be able to afford to go without income. If you can't afford to go without income, you don't have a choice. You have to go back to work. And for those who go back to work, then the issue of, what access do you have to good

quality childcare for your children? Childcare, particularly for very young children, for babies, is very expensive. Good quality care is very expensive, so we have many children who are in childcare settings of very poor quality, because their families don't have the resources or the information to be able to afford and choose better childcare, and we don't have policies that make it easier for them to have access to that or to afford it.

So, I think the disconnect between the changing circumstances and the greater pressures on families and the absence of using our knowledge to have wise policy responses to that is very striking, and again, I think this is an area where we have reasons to be hopeful, because more and more people are understanding the importance of the early years. They are understanding the importance of a shared responsibility, the fact that if we think in terms of other peoples' children, we all pay a price someday. If we think in terms of all of our children. then we end up by building a very strong foundation for a much more prosperous and shiny future for our children and their children afterwards.

END OF INTERVIEW